

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[B.PHARM 1223]

**DECEMBER 2023
(SEPTEMBER 2023 EXAM SESSION)**

Sub. Code: 2084

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 - SEMESTER VIII
PAPER V – CELL AND MOLECULAR BIOLOGY**

Q.P. Code: 562084

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Write in detail about the Cell membrane and membrane proteins with neat diagram. Explain the applications of cell membrane.
2. What is DNA? Write in detail about the primary structure of a polynucleotide chain.
3. What is positive control of Transcriptional regulation? Explain its significance in protein synthesis.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Explain the general properties of Proteins.
2. How ATP links anabolic and catabolic reactions?
3. Differentiate Mitosis and Meiosis.
4. Explain the transcription process of protein synthesis.
5. What are the basic principles of rDNA technology?
6. Explain the 4 phases of cell cycle.
7. Explain about the cell surface receptor that transduces the cell signals.
8. Explain the following signaling mechanism with suitable example.
a. Paracrine signaling b. Autocrine signaling
9. What are the steps involved in the cell signaling mechanism?

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. What are the functions of Nucleus?
2. Explain the importance of Cellular reproduction.
3. What are the trace elements present in the human body?
4. What is cloverleaf model of transfer RNA?
5. What are the enzymes involved in DNA synthesis?
6. What are the three regions of transcription unit?
7. State with example the amphoteric nature of amino acids.
8. Give some examples for non-viral vectors in gene transfer.
9. Differentiate homozygote and heterozygote.
10. How Nitric oxide (NO) acts as secondary messenger?
